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THE GENESEE FARMER.

SATURDAY, NOVEMBER 10, 1838.

THE GRAIN WORM.

We give it up. Desirous as we have been to believe, or rather to hope, that the grain worm ceased to injure the berry of the wheat as soon as it became hard, and that consequently, the idea of its eating after the grain was harvested was erroneous, facts have convinced us that the worm does not cease to feed on the kernel until its transformation or its death. Some of these facts and our experiments we shall mention here. We have before alluded to confining some worms with wheat in a glass vial. They were so confined a month, when the wheat was examined and some of the kernels had been plainly eaten, but most of the worms were dead. The vial with its contents was again put away for fifteen days, and then examined. The worms were dead,but that they feed to the last is evident from the kernels now lying before us, some of them nearly half devoured, while others have been but just commenced upon. Every kernel was selected singly and perfectly sound, for the experiment. The fact therefore is undeniable, *that the worm does feed on the ripened berry.* We have also since harvest selected ears of wheat in the field, containing the worm, and which bore evident traces of having the kernels fed upon since maturing: and ears taken from the mow, containing worms, have not unfrequently kernels exhibiting the same appearance. Some of these worms we enclosed in a vial of flour. After being in it a month, the contents were examined, and every one was found dead; a conclusive proof that they are different from the weevil or the common flour worm, with which some have confounded them.

We have this summer been making some observations on the fly that produces the worm, and its method of operating; but fortunately for us, our opportunities for noticing the fly were not as favorable as last year, as they were much fewer in number on the wheat. After much attention to the matter, we are inclined to the opinion that there are at least two varieties of the fly that infest wheat, both belonging to the genus *Cecidomyia* of Latreille, the *Tipula* of Linnæus. This is not improbable, when it is recollected there are a great number of known species of this insect; upwards of thirty having been found in England alone. One of these species, a reddish or changeable green fly, we have detected depositing its young on wheat, and on some kinds of ripe berries, as the common blackberry. It is furnished with an ovipositor that folds under its belly; and is used for penetrating beneath the chaff of the wheat. The other would seem from description to be the *Cecidomyia palustris* of Wilson, its *white* halteres, and *flesh-red* abdomen with a retractile ovipositor, corresponding exactly with his delineation. This we think is the common insect, the parent of the worm most commonly found in wheat, barley or oats, (we have seen the fly in all) and which is so destructive at the present time. The appearance of the worms themselves would indicate a parentage not in all cases the same, and we have observed that part of them attach themselves to any object with which they come in contact, and if disturbed secure themselves from falling by a thread, like the worms found in clover heads sometimes, which indeed this kind of the worms very much resemble.

Some difference of opinion exists among observers, whether the product of the fly is oviparous or viviparous; whether an egg is deposited which produces the worm, or whether the worm, already vivified in the body of the parent, is placed on the kernel. As examples of young produced in both these ways, we may refer to the Genus Musca of Linn. of which, one species, the *Musca vomitoria*, or green fly, deposites an egg, from which the maggot is produced, while the *Musca carnaria* deposites its living larvæ, (the young having been hatched in the body of the mother) on any place deemed suitable for their residence. In the first case the egg, after the escape of the larvæ, always remains; in the latter case none is ever seen. In repeated examinations with an excellent microscope, we have never been able to detect the least appearance of a covering from which the larvæ had escaped; and though ears of wheat have been examined on which the fly was caught in the act of of depositing its egg or young, the product was always living,and though exceedingly minute, able to move and crawl. The legitimate inference, therefore, would seem to be, that the worm is viviparous, or deposited in the living state by the parent. The fact is of some importance in determining the best means of effecting their destruction, as lime water or the fumes of brimstone, while they would produce no effect on an egg, would be fatal to the young larvæ; and it was regretted that the question could be determined no more satisfactorily.

Some observers of the habits of the wheat or grain worm, have contended that the young larvæ did not penetrate the kernel of the grain, but produced the injury by pressure of the grain, and an abstraction of the juices necessary to bring it to perfection. The latter is the case, but the abstraction is clearly made by the perforation of the kernels. In examining infected ears of wheat, after carefully removing the coverings of the berry, a small whitish spot may be seen on the grain. Submitting this to the microscope, it will be seen that the whitish mass is the small particles of exuviæ thrown out around the insect, in the centre of which a small opening may be discovered most generally occupied by the head of the larvæ, which is thus occupied in feeding on the milk of the berry, and deriving his subsistence at the expense of the grain. Those who have examined green peas,when the pod and pea was occupied by the larvæ of the pea bug, can have a good idea of the appearance of a wheat kernel in the earliest stages of the attack of the wheat worm. That the worm does from the first penetrate the berry, and feed on its vital juices cannot admit of a doubt.

The propriety of threshing wheat as soon as harvested, when infested by the worm,is obvious; since, as after the berry becomes hard, the worm is at large in the chaff, and threshing and cleaning frees the wheat or other grain from their presence and their rapacity. Personal observation and inquiry in almost every county of the Western District of this state since the past harvest, has shown us that the worm has spread over the whole of it with the exception of a small part of the southern tier of counties. There we were assured the worm had not yet been seen, and the same exemption is enjoyed in the northern counties of Pennsylvania; while the great wheat growing counties of that state, to the south, have this year been greatly infested. That the grain worm is destined to overrun the country seems clear; how seriously, or for how long a time its presence is to be felt, time alone can determine.

Vomiting in Cattle.

We have condensed the following article from a paper in the London Veterinarian, a work as its name impplies devoted to Horses and Cattle, and treating most subjects with great ability and success. The disease alluded to here is not a very common one, but we have known instances of it, and valuable animals are doubtless lost every year from this cause, and not understanding the proper treatment. The paper is from the pen of M. Sautin, a veterinarian of celebrity.

Mr. S. was sent for to see an ox which had vomited almost continually for fifteen days, and by directions of an empiric had been drenched with doses of oil, such as linseed, walnut and olive oils, but without any beneficial effect. The eyes of the ox at this time were deeply sunk in its head, the pulse feeble and the walk staggering. He eat with greediness, and masticated well, but after he had eaten a certain quantity, he became uneasy, the muscles of his belly contracted, he stretched out his neck, the food began to ascend the gullet, it filled his mouth, and then fell to the ground. This continued till he got rid of all he had eaten; and then he would begin to eat anew. It was the same with liquids except that they were ejected with more force. Proper rumination,or chewing the cud, was altogether suspended, and the ox was so rapidly wasting away that its speedy death was feared.

The cure consisted of an infusion of mint, an ounce of camphor, suspended in a sufficient quantity of vinegar being added to every two bottles of the infusion. This dose wes not rejected from the stomach. Three hours after a little hay was given, and was retained. Some water whitened with rye-meal was also drank, and soon began to ruminate the food he had taken. The next morning the drink was repeated, and after two hours rather more hay than before, with some of the rye-meal water, and he again began to ruminate. The farmer now, contrary to orders, gave him too large a quantity of food, and the disorder returned; but was checked at once by more of the infusion. On the third day another drink was given, and he was allowed a fair quantity of food.—It was retained, the sickness did not return, and the animal rapidly recovered its health and condition.

In the second case, a cow that had been employed in drawing wood, when released from the yoke began to vomit, and she ejected a prodigious quantity of food. Her belly was greatly contracted and her flanks fallen in; her left ear hung down as if it was paralysed, and she was also blind on the same side. The upper eyelid was relaxed and engorged, but the eye itself appeared healthy, and clear. She ate voraciously, but ejected it as soon as swallowed. Three pints of an infusion of peppermint, with six drachms of camphor dissolved in vinegar, were given and retained. Food was almost immediately returned. After three drinks had been given, the stomach retained hay, and she ruminated. The next hay she vomited a little after eating, but another drink checked it, and after a few hours more food was given her. She was sick no more. Her ear soon resumed its natural position, and her eye its perfect sensibility to sight. During the disease, the incisor teeth became black and loose, but in a short time regained their natural whiteness. Mr. S. was of the opinion that this effect on the teeth was caused by the acid fluid ejected from the stomach. Another case, almost the same as this, was terminated by similar treatment in the same way.

Other cases are given, in which this mode of treatment in curing vomiting was successful, though some were quite obstinate, and required a course of mint infusions for several days before food in any considerable quantity would be retained on the stomach. Fortunately this disease is a rare one, but whevever it occurs it is a serious one. We would here ask whether in cases of blown cattle, which frequenrly occur, peppermint infusion with camphor has been tried? The remedy to us would seem likely to have an excellent effect; at any rate we should think it deserving of trial.

SWINE.

There are a great number of breeds of swine, highly recommended before the public; some preferring claims to favor of one kind, and some of another. Some fat easy, are quiet, and orderly, but are not heavy enough for the farmer, as it is said; as the Chinese in its pure or nearly pure state. Another sort are large and heavy, but require a long time to perfect their growth and get fat, are restless and uneasy, and evidently have little or none

of the quiet eastern blood in their carcasses. Of this kind are the *large* Hampshire and Woburn breeds, from which many of the varieties of the swine in this country are descended. There other kinds,such as the Berkshire, and what is called the smaller Woburn or Bedford swine, who unite in a great measure the quick fattening properties of the Chinese, and the greater weight of the heavier varieties, and are evidently fortunate crosses of some of the English kinds with the Chinese pig.

Of the several varieties in this country, the kind most esteemed are the Chinese, of which there are comparatively few pure blooded animals, and these are principally kept for the purpose of crossing; the MacKay breed from the vicinity of Boston, and quite as favorite in that section, but evidently a cross from the Berkshire, with some other breed of English derived hogs, most probably from color and form the Cheshire white pig, a very valuable and fortunate cross however; and the Berkshire variety,which has been widely disseminated through the northern states, and has proved of superior value and well worthy of the notice it has received.

That new varieties of the hog may be produced, ad infinitum, is evident from the nature of the case, and there can be no good reason given, why, by fortunate and skillful selections from the different and most esteemed kinds, a breed or breeds superior to any yet known may not be produced; combining in the greatest possible degree the requisites of size, quiet, easy feeding, and fine flavored meat, which it is clear all the present kinds do not possess. In the making of pork the color of the animal should weigh but little, still an inferior variety of white, would meet with more favor, than a superior one, if unluckily it was of a black or dark color; this has been seen in the case of the Berkshire, a prejudice as unworthy the farmer, as that which still leads many to prefer the old fashioned red cow or ox, be they over so badly built, to the clean handsome formed Durham, because the latter is spotted.

Numbers of the best Berkshire swine have within a few years been introduced into this country; some by Mr. Hawes of Albany county, from which Mr. Bement's valuable stock are derived; and still more lately by the Messrs. Brintnall of Orange county, some of which have attained a very great weight, two at eighteen months each weighing nearly 500 pounds each. Parkinson in his treatise on live stock, after describing the Berkshire pig, as being thin skinned, hair curled, and without bristles, says; —"The pigs of this kind I took to America, received the appellation of Parkinson's no-bristle pigs. The Americans were so partial to this breed, that I sold sucking pigs weighing 20 to 32 lbs. each, at 20 dollars a sow, and 25 dollars a boar. I knew a pig of this kind, killed at the age age of 15 months which weighed 574 lbs."

A letter from the Hon. Oliver Fiske, in the 3d volume of the New England Farmer, gives a version of the introduction of these pigs by Parkinson, rather different from the above, and which shows the origin of the excellent breeds of swine around Boston, such as the MacKay, Worcester, Bedford, &c. By the way this same 'English farmer' Parkinson, is the individual who on his return to England, published a book on agriculture, in which he asserts,—that the American cattle are kept so poor that their manure is of no value; and that the American cart contains no more than the English wheelbarrow. Mr. Fisk says:—This breed of swine (the Berkshire) was introduced into this state by the Hon. T. Pickering, from the farm of Gen. Ridgely, at Hampton, 14 miles from Philadelphia. Gen. Ridgely informed him that they were brought into this country, as a present to General Washington from the Duke of Bedford, (hence the name of Bedford, by which they are sometimes known) who committed them to the care of an English farmer by the name of Parkinson. This man took a farm in the neighborhood of Baltimore; but instead of sending the swine to Gen. Washington, Parkinson sold them. Gen. Ridgely esteemed them very highly, and sent Col. Pickering a pair of them in a vessel bound to Salem. From thence they were transferred to Roxbury, Worcester, &c.

When we consider the great value of swine to the community, the immense numbers that are annually fed for pork, and the prodigious saving that would result to farmers by substituting some of the improved and easily fed kinds for the former inferior sorts,we are pleased at the efforts made to bring such varieties to the notice of the farmer, and disposed to rank the introduction of such animals into any place, as a signal benefit. Slow as some farmers may be to break in on their long established usages, seeing with them is believing, and no one can see the fine swine of the Messrs. Allen of Erie; Marks of Onondaga, or Bement of Albany, to mention no others, without being impressed with their superiority. Spite of old prejudices, we believe the Chinese crosses in some of their varieties; the Durham Short Horns, the Leicester and South Downs, and the English roadster, will yet find their way securely into public favor.

SOILING CATTLE.

The above is the term applied to the system of feeding animals with green feed during the summer; the animals being kept in stables, and the food cut and fed to them there, instead of allowing them to gather it for themselves, in the field. Von Thaer the great Prussian agriculturist, in relating the experience of Baron Bulow on this subject, lays down the following as incontrovertible facts:—

"1. A spot of ground, which when pastured, would yield only sufficient food for *one* head, will abundantly maintain *four* when left in the stable. 2. Soiling affords at least double the quantity of manure from the same number of cattle: for the best summer manure is produced in the stable, and carried to the fields at the most proper periods of its fermentation; whereas when dropped on the pasture or meadow, and exposed to the action of the air and sun, its power is much wasted. 3. Cows that are accustomed to soiling, will yield much more milk, when kept in this manner, and fattening cattle will increase much faster in weight. 4. They are less subject to accidents and diseases—they are protected from the flies that torment them in the fields during the warm weather, and they do not suffer from the heat of summer."

Experiments in this country have been made which in the main establish the above positions of Von Thaer.—The only serious objection that we have heard, is the labor required during the summer season, when work is in great request in the field, and difficult to be procured at any price. Men can, however, be hired for this labor if necessary, as well as for any other; and the policy of doing so, rests on the mere question of profit and loss. If as Sinclair states, 33 head of cattle were soiled on 17½ acres from the 20th of May to the first of October, when the same cattle would have required at least 50 acres in pasture, it is clear that the use of the 33 acres saved by soiling, at the lowest rates would have paid for far more extra labor than would have been required, independent of the superior advantages of the system. One man would have taken care of the 33 head of cattle without difficulty; and the extra crops that might be grown on the 33 acres saved by the process must be inferior indeed, not to compensate the labor of half a dozen men for five months. The experience of the Hon. Josiah Quincy fully establishes these facts and inferences in regard to the benefit of soiling.

During the past years, as appears from a paper in the N. E. Farmer, Mr. Holt, a gentleman of East Haddam in Connecticut, sensible of the advantages of the soiling system, but experiencing some difficulty in finding a proper succession of food, especially the latter part of the season, followed the example of a farmer near New London in sowing corn broad cast to be cut when wanted. The following he has given as the result of his experiment.

On the 15th of June, 1836, about 16 square rods of ground,which had been well manured, and well ploughed, were sown broad cast with horse tooth (gourd seed or southern corn) at the rate of four bushels of seed to the acre. The seed was then lightly ploughed in with a small horse plough, after which the ground was rolled and harrowed. On the 10th of August following he began to cut upon the green crop of corn stalks, on the above described ground. The stalks which grew from the 16 rods of ground, afforded forage for a horse from the 19th of August to the 8th of October, and also the principal part of the food of a cow from the 5th of September to the 8th of October; making 50 days keeping for the horse and 33 for the cow. On the 5th of September when this corn was 5 to 8 feet high, but had not eared or tasselled out, the produce of one square rod was cut up, and while green it weighed 375 lbs. This was at the rate of 30 tons to the acre. This 375 lbs. was dried, and on the 27th of October weighed 86¼ lbs. which is at the rate of 13,800 lbs., or about 7 tons to the acre. The advantages of sowing the horse tooth corn, instead of some of the smaller sorts, are, the horse tooth being a taller kind, makes a much greater amount of fodder. An acre of corn sowed this way on good ground, would probably afford green forage for 30 cows a month, or for 8 horses for the same length of time.

Such is the substance of Mr. Holt's paper, and it seems to point out a mode in which Cobbett's project of keeping a cow to an acre the year round, can be realised. Perhaps there is no food more grateful or healthful to the ox, or the horse, than that of the leaves or stalks of corn, when secured at the proper time, and in a careful manner. The quantity of nutritive matter the stalks contain, even under the present injudicious mode of treating it, is very great, and if cut and steamed as it should be, would add most materially to the means of feeding; and every one who has traveled at the south knows the avidity with which the northern as well as the southern horse feeds on corn leaf fodder. We would add here, that in our opinion, much of the relief, not to say cure, experienced by horses from the north subject to the heaves, when taken to the south arises from substituting the clean grateful corn leaf as food, in the room of the too frequently mouldy, and always dusty hay of the north. In a season of drouth like the past, an acre or two of corn like Mr. Holt's sown broad cast, and of good growth, would have been a most material aid in supplying the many half starved cattle and horses that were to be seen even in our fertile Western New York with the most nourishing food; and if not wanted for that purpose in the summer, by being cut and dried, would make a supply of winter food far greater and more valuable than could be obtained in a dry state in any other way.

The system of soiling, it is evident, requires rich lands to grow the food; and it is clear, there is no method so well calculated as this to keep lands rich. We think it might be made a most profitable part of our mode of farming on our rich grain growing farms, by enabling us to keep greater quantities of stock than we are now able to do; thus securing at once, greater sources of comfort and profit, and the most effectual means of retaining the fertility of our soils.

TORNADO.

On the afternoon of the 25th of last July, a violent tornado passed over part of the county of Allegany, rarely equalled in its destructive effects, and giving a most striking illustration of the peculiar movements of the wind in these aerial currents. It was noticed in some of the journals at the time; but happening to cross its route, in passing up the Genesee valley in the succeeding month, we were so much interested with the appearances as to be induced to prepare the following sketch for the readers of the Farmer.

The first appearance of severe wind, was, as we learned, in the town of Rushford some fifteen miles from the place where we observed its effects. The day was hot and sultry, and the course of the gale was from the N. of W. to S. of East. At its commencement in Rushford, it was only a violent thunder gust, such as are frequently experienced, but it soon acquired such force as to sweep in places every thing before it. In its passage the same violence was not at all times exerted; some places seemed wholly passed over; while in the same direction and at only a small distance whole forests were crushed. In the language of one who had suffered much from the gale, "it seemed to move by bounds, sometimes striking and sometimes receding from the earth," which indeed was most likely the case.

It passed the Genesee river in the town of Belfast, a few miles below Angelica, and its fury was here exerted on a space of country perhaps a mile or a mile and a half in width. The country here is settled and cleared along the river, but the road passes at a little distance from the

river, and at this point wound through one of the finest pine woods to be found on the stream. Of course when it came over the higher lands from the N. W., the tornado crossed the river and the plain before encountering the groves of pine. In the space occupied by the central part of the tornado, say three-fourths of a mile in width, nothing was able to resist its fury. Strong framed houses and barns were crushed in an instant, and their fragments and contents as quickly scattered to every point of the compass; while those out of the direct line were only unroofed, or more or less damaged. Large oaks and elms, were literally twisted off, or crushed like reeds.

The road from the north approached the pine woods on what was the northern verge of the tornado, and the first appearance of the country in front was that of woodlands in which all the trees had been broken off at the height of 20 or 30 feet, leaving nothing but countless mutilated trunks. On entering the narrow passway, however, which with immense labor had been opened through the fallen trunks, it was perceived that much the largest part of the trees had been torn up by the roots, and lay piled across each other in the greatest apparent confusion imaginable. Fortunately for our view of the whole ground, a few days before our arrival, fire had been put in the 'windfall,' and aided by the extreme dry weather, the whole was burned over so clean, that nothing but the blackened trunks of the trees were remaining, thus disclosing their condition and position, most perfectly. This position was such as to demonstrate beyond the possibility of a doubt, the fact that the tornado had a rotary motion against the sun, and in perfect accordance with the course which we in a former volume of the Farmer have ascribed to such electric aerial currents, a theory first developed by Mr. Redfield of New York.

The first tree met with, prostrated by the tornado, was a large pine, and lay with its top exactly to the N. of W. or precisely against the general course of the storm. Hundreds of others lay near in the same direction on the outer part of the whirl, but immediately after entering the fallen timber the heads of the trees began to incline to the centre of the space torn down, and south of this the inclination was directly the reverse until the outside of the whirl was reached, when they all lay with their tops to the east. This almost regular position of the fallen timber, was most distinct in the bottom courses, or that which was first blown down, those that resisted the longest, being, as was to be expected, pitched in the most diverse directions. That there was also an upward spiral motion, causing a determination of the rushing air to the centre of the whirl would appear probable from the fact that articles from the buildings destroyed were carried high in the air, and then apparently thrown out of the whirl, into the common current; and also from the fact that a large majority of the trees both to the south and the north of the centre of the gale, lay with their heads inclined to that point, while the centre was marked by the greatest confusion imaginable. A diagram formed of a continued succession of circles moving from the right to the left would illustrate the position of the trees first uprooted, as these lay as when first crushed by the approach of the whirlwind.

Many curious facts illustrative of the force of the wind was related by the inhabitants in and near the place. A farmer attempted to drive his team of horses to the barn, but the tempest was too soon upon him. When the rush was over, and it was but seemingly a moment, he found the barn torn to pieces, himself about thirty rods in one direction from it, and his horses as many rods the other, and what was most remarkable with scarcely a fragment of the harness upon them. A wagon was blown away, and a month afterwards one of the wheels had not been found. A house standing near the Genesee river, and a little out of the line of the gale, was completely covered with mud that must have been taken from the bed of the river. And appearances render it very evident that near the centre of the whirl the water was entirely taken from the channel.

Palmer Johnson of Claremont, says the Eagle, sold a cow and calf for one hundred dollars. The sale took place some few weeks since.

MILK.

M. Turpin, a French physiologist and experimentalist, asserts that he has seen milk, which is considered as an animal substance, turn into a vegetable. He compares the globules of which milk is composed, to the bulbs in which hair is generated, and he has seen them developed in the same manner, so as to form the *Pennicillium glaucum*. M. Turpin describes the changes milk undergoes in its conversion to the vegetable, and adds that the Pennicillium, primitively and immediately produced by the globules of milk, afterwards enjoys the faculty of reproduction;—that the globules of milk when stopped and accumulated in the lacteal vessels, have the power of germinating there, and pushing forth long flexible stems, and thus by obstruction causing swelling and disease; and that the fibrous vegetation of the milky globules strongly resembles that of the bulbous plant, as well as that of the Conferæ. Whatever may eventually prove to be the result of M. Turpin's somewhat startling theory, every physician and physiologist must acknowledge that some things, hitherto very difficult of solution, are admirably explained by it.

American Farming Implements.

Hitherto we in this country have been mainly compelled to introduce from abroad our agricultural implements, or at least their models; but since the attention of the public in this country, principally by means of agricultural journals, has been called to this subject, and the necessity of an improved system of cultivation to the prosperity of the nation demonstrated, the ingenuity of our farming mechanics has been put in requisition, and already we see in the foreign papers that our agricultural implements are taking the same rank in their fields, that our machinery does in their manufactories.

The last No. of the London Farmers' Magazine contains a most flattering notice of the performance of the revolving Horse Rake as made in this country, and delineated in the present volume of the Genesee Farmer; and Green's Straw cutter, in the same and in other English and Scottish Journals, is pronounced in ease, rapidity, and excellence of execution, superior to any other straw cutting machine yet known. These facts we consider quite complimentary to the tact and skill of our mechanics, and the progress of agricultural improvement in this country.

From the Farmer's Cabinet.

Preparation of Food for Hogs.

To make the most of anything is good economy.

It is a general opinion and believed to be founded on correct observation, that the food given to hogs ought to be slightly soured, in order to produce the greatest possible effect in improving their condition. In corroboration of this opinion, in Germany and some other parts of Europe, horses are fed on bread that has been fermented so as to be a little soured, and it is said to be more economical than feeding them with grain. Bread which is brought by the process of fermentation very near to the point of acidity, and that in general use amongst our German population, quite to that point, is well known to be more wholesome and much more nutritions than unleavened bread. Hence it is not unreasonable to suppose that all farinaceous substances fed to animals would be more economically and beneficially applied by being first slightly fermented. In order more effectually to accomplish this object in preparing food for hogs, two tubs should be procured of such size as would be adapted to the number to be fed, in which to prepare their food; these should be used to feed from alternately; the materials in one would be undergoing the necessary preparation, while feeding from the other. The weather being generally cool while hogs are fattening, the process of fermenting progresses slowly, and if it is very cold it is entirely suspended, unless artificial means are resorted to, to keep it up. Pieces of stale, or mouldy bread that are no longer fit for family use, and which find their way into the swill tup, are uniformly found to put the whole contents into a state of fermentation, if suffered to remain for a few hours. This has suggested the opinion that a small quantity of yeast which is a cheap article, might with advantage be added to the contents of the tub containing the food for swine, in order more quickly and thoroughly to bring it into a complete state of fermentation and advance it to slight acidity before it was fed.—This addition need not be often made, provided the tub was replenished with food before it was quite emptied of its fermented contents, and in this way it could be kept up during the feeding season. Corn or other grain that has been steamed, boiled, or well soaked is very susceptible of the influence of yeast. Starch makers and distillers use it in order to prepare the grain, so that they can extract their respective articles of manufacture from it with more facility, and in greater quantities; and it appears reasonable to suppose that the stomachs of animals would have their labor abridged, and would be enabled to extract a greater quantity of nutriment from a given quantity of grain or vegetable matter thus prepared, than when it is fed to them in the usual way.

The stages of fermentation are the saccharine, the vinous, the acetous, and the putrefactive; the first is exhibited in malting of barley, which is rendered sweet by it; the second is shown in the working of cider or beer; the third is noticed in the souring of bread, and in the formation of vinegar, and the fourth is discovered in the decomposition of bodies generally. In the preparation of food for hogs, it is believed it should advance to the third stage but not pass through it, for after it enters the fourth and last stage of fermentation, it would be very prejudicial to the health of animals, and could not contribute to their nourishment in any way whatever.

These hints are thrown out to elicit information from farmers, who will soon be fattening their hogs, and if any experiments or observation should be made by them that would enlighten or instruct their brethren who are engaged in the same laudable work, it is desired that they may be communicated through the Farmers' Cabinet, for we now have a channel of communication with each other, which it is presumed will be useful to all, if it is made a proper use of. T.

Winter Work.

The labors of summer and of harvest being finished, it may not be inappropriate to inquire, what shall be the work for Winter?

Fall's last month, and winter's three, with their short days and long evenings—how shall the farmer improve their moments of day and of evening to his best profit and entertainment? We should say, let him *bestir* himself in business during the day, and in the evening, cultivate the intellectual soil, the mind. Let him enjoy the fruit of his summer labor and industry by the social fire-side, and treasure up a knowledge which shall guide him in his duties as a citizen, and direct him in a better application of his labor so as to secure an increased product with less expense. The farmer is truly privileged above his coequals of other classes, in the particular of having his evening to himself, as a time of leisure from his toilsome labor, affording an opportunity of mental cultivation and social happiness, which the envied may envy. Improve it we say—be glad in your abundance, and be wise in your gladness. And permit us here, to suggest that in this opportunity for the attainment of knowledge, you do not neglect the knowledge of your own occupation—the science of agriculture. Every one should give his chief attention to his own calling; it should be his highest ambition, to excel in that—to elevate it and render it honorable, and thus to be honored in it. But we will leave the merry evening, and turn to the work of the day.

The last month of Autumn, is not a month of idleness. The farmer must be active to prepare for winter. All the buildings intended as an asylum for man or for beast from the chill blasts of winter, should be made tight so as to exclude his cold breath. Cattle when kept warm, do not require near the quantity of food that they do if exposed to the inclemencies of the season. A warm house is half a wood-pile.

The cellar too, should be made secure from the old thief, Jack Frost—and every thing we would wish to secure from his clutches should be *seasonably* deposited there just one day *before* the first freeze. Lastly, a word for the poor bawling cattle, and we will retire into winter quarters. Do not let them suffer and starve and pine for want of food. What they do not obtain from the fields sufficient fully to keep them in flesh, supply them from the barn. It is poor economy to *pinch* cattle at any season, but the poorest to commence winter by half starving them.

Winter—to the slothful who have not made preparation, cold, dull, unwelcome winter; to the diligent, with their full garners, tight and convenient buildings and a "rousing wood-pile" of dry wood, joyous, merry, welcome winter—"this too, is not a season for idleness; a term which precludes the idea of enjoyment, but its active hours are pleasant and useful to the farmer; it is peculiarly the season of his intellectual culture. But we will defer a specification of its appropriate work, as "there is time for that yet" (a bad phrase) meanwhile suggesting that the Cheshire Farmer will expect to greet you at your winter evening firesides.—*Cheshire Farmer.*

In an Address delivered at the Caledonia Cattle Fair, at St. Johnsbury, Vt., it is computed that if the present quantity of wool shorn in that State, could be sold for fifty cents per pound, a further sum of $1,500,000 would be necessary to furnish the inhabitants with the necessary woolens for the year to come. In 1837 the number of sheep in the state was 1,166,234.

COMMUNICATIONS.

NOTES ON WESTERN NEW-YORK—No. 4.

SOILS.

The soil of the middle or elevated part of the Western District is so distinctly marked from that of either the Southern or the Northern slope, that I consider it as deserving a separate notice. This difference indeed might be inferred from the geological structure of the section, and from the fact that this zone is more clearly made up from the decomposition of the strata below, and owes less to disintegration or to deposition than either of the other divisions. So gradual is the change, however, and so slight the shades of difference on either border of this zone, as it merges into the sandstone formation on the one hand, and the limestone formation on the other, thatthe line of demarcation, particularly on the south, is with some difficulty drawn. That such a difference exists is obvious to every one who has crossed or examined these divisions of the state; and the marked argillaceous character of the district now under consideration, is as apparent as the siliceous soil of the slope we have noticed, or the decidedly calcareous ranges on the north.

In crossing the state from the Pennsylvania line to lake Ontario, say at the two points of Owego and Oswego, and Olean and Rochester, the southern slope would have a width on an average of thirty-five miles; the middle or argillaceous zone of about twenty-five or thirty miles; the strictly calcareous zone an average width of fifteen to twenty miles, and the sandstone margin of the Ontario, a width of from six to eight miles, in the whole about ninety miles. The centre of the argillaceous or elevated range may be considered as crossing the south of Erie, Genesee, Livingston, and Ontario counties, embracing Yates, and passing through the south divisions of Seneca, Cayuga, Onondaga, and the central part of Madison to the east line of the district. The difference observed in the geological strata; in the greater prevalence of clay and calcareous shale, over the south; and the want of the lime rock of the north; (with the exception on the northern margin of erratic boulders of this material)is fully borne out by the analysis of the soil, in the several parts. As the sandstone zone is left to the south, traces of lime become more numerous, the clay becomes a larger constitutent in the soil, fossil shells are abundant in the shale, deposites of marl and in some places tufa are common, and as the northern border is approached calcareous shale suitable for burning is found in large quantities, and used for this and other purposes by the inhabitants.

The examination of the sandstone slope showed the soil to consist of sand 68, clay 8, and lime 1. An examination of specimens from the argillaceous sections in Genesee, Seneca, and Onondaga counties, while in their results they varied but very little, gave as the average of the above constituents of the soil, sand 64, clay 16, lime from 3 to 6, and the remainder vegetable and animal matter, salts, &c. the exact proportions of which I had no means of accurately ascertaining. Several specimens of hardpan, or subsoil from the same sections, gave the silica or sand from 52 to 55, clay 30 to 34, and lime from 4 to 8. In one specimen of what was called blue clay taken from a well at the depth of seventeen feet, I found 14 per cent of lime; the remainder was clay and sand in the proportion of 65 of sand, to 18 of clay. In a few specimens of the purest clay slate, found near the surface of the ground, there was very little lime or sand, and in water it became a tenacious paste; while other specimens gave both lime and sand, thus evidently showing a disposition to pass into the sandstone shale, or the lime rock, as the geological position would indicate.

It will be seen at once the soil of this zone partakes in part of the character of both the others; the obvious difference consists in the diminished quantity of sand, and the increased quantity of clay and lime. The vegetable productions correspond to this variation of the nature of the soils. The evergreens become comparatively scarce. The forests of pine are succeeded by the hard woods, oak, elm and maple; the shrub oak, ferns, and ivy are unknown; the tamerack, balsam of fir, &c. are found in some swamps, but are far less prevalent, particularly the latter, than on the head waters of the southern streams. The pitch pine is almost unknown. The pests of agriculture, noxious weeds, such as those that unfortunately are apt to follow continual cropping unless ceaseless vigilance is exercised by the farmer, I allude to the Canada thistle, johnswort, charlock, &c. are much more common in this section than in the former, a result probably produced by the joint operation of two causes; one, being the greater quantity of clay, which renders the soil more favorable to their existence, and the other the greater quantity of land ploughed and sown annually, thus giving an opportunity for the vegetation of foul seeds scattered by the wind as well as those sown with the grain or the grass seeds, by the farmer himself.

Soils of the kind under notice, are more difficult to cultivate than those of a lighter or more siliceous nature, but they are also stronger, and for the production of some plants are found superior to the latter. In comparing the subsoils of the southern and middle zones, I found the first composed of sand, clay, and pieces of sandstone shale, very few pebbles, comparatively, of the primitive, and none from the limestone rocks being found in the composition, while in the latter the great mass of the pebbles embedded in the clay were from the primitive and limestone ranges, with a sprinkling from the red sandstone margin of the Ontario. This difference in the composition, accounts for the greater quickness with which the subsoil of the south becomes friable when exposed to the air, and when mixed with mould, or vegetable or animal matter, is at once permeable to the roots of plants, and of course productive. The effect of cultivation, so far as I have observed, on the loams and friable subsoils of the southern slope is to render them less tenacious, and more favorable for cropping; while on the argillaceous soils of the middle section, particularly the more elevated parts, cultivation appears to have a tendency, by reducing the proportion of vegetable matter, and perhaps that of the lime, to render them more dense, and less adapted to ordinary crops. Skilful cultivation it is true will obviate these objections; but observation shows that the farmer is usually more anxious to take from the land, than to return to it—more industrious in gathering his wheat and barley, than in carting back his manure and lime; and hence in so many cases on all soils, the natural result of poverty in the soil, and rapid deterioration in the plants cultivated.

The quantity of lime in most of the soils and subsoils of this division may, on the whole, be considered remarkable, but several causes seem to have conspired to produce such a result. In the first place the greater part of the strata that have by their decomposition aided in forming the soil, abound in fossil remains, principally of animals having shells, and large masses having such shells still entire, or only partially decomposed, still abound. Of course much of the animal matter and the lime, from these organised materials, must be still in the earth near them. Another and perhaps more efficient cause may be traced in the immense quantities of limestone boulders, stones and pebbles of all sizes, which have evidently been drifted by some northerly current, scattered over the surface, or by trituration been ground into limestone pebbles or sand, and thus intimately mixed with the soil of the district. Such limestone is constantly undergoing decomposition; it is held in solution by the water, as is evident from the continual deposition in the shape of marl, travertin, or gypsum; and hence the fact that all the water of this section is hard, and unfit for washing, while that of the southern slope is free from any impregnation of the kind.

VIATOR.

A Valuable Cow.

MR. TUCKER—I noticed in your last number an account of what is called a rare cow. I have one still more rare. She was six years old last spring. Brought a calf on the 29th day of May last. On the 27th of June, I took from her at three milkings, morning, noon and night, of one day, 31½ quarts of good rich measured milk, which was not more than an average for the whole month. The last week in July, I found that her milk failed a little, and being some trouble, I stopped milking her three times a day. On the last day of July, at two milkings, 24 quarts—on the last day of August, 21½ quarts—on the last day of September, 18 quarts—and yesterday, the 31st of October, I measured 15 quarts that I took from her. She had no feed but that of a common pasture (in which however was plenty of good water and shade,) from 1st of June until the last of September, and lodged at night in the barnyard—first of October turned her into a mowing field—the last week in October fed her once a day with hay and twice a day with ruta baga tops. I have no doubt had I given her a more liberal feed, I should have been amply remunerated by an increased quantity of milk.—Her size and handsome appearance excels any cow I have seen in this part of the country.

I have a heifer calf from her of 17 months old that bids fair to equal her dam. A bull calf from her of five months old of great promise—from a full blooded Devonshire bull. He has the rich color, the apparent hardihood, and the liveliness peculiar to the Devonshire, the large hind quarters in proportion to the fore ones, and shape, that denotes the deep milker, peculiar to his dam.

A breed of cattle that would possess the rich color, the hardihood, the useful capacities of the Devonshire, the size, the fattening properties of the Short Horns, with the milking properties of this animal of mine, would be invaluable. A judicious selection from this cross may go far towards obtaining one. This cow is now with calf by a full blood Short Horn—and she herself is three quarters blood of English extraction.

I am respectfully, sir, yours, &c. THOS. TUFTS.

Le Roy, Genesee co., Nov 1, 1838.

BAKEWELL SHEEP.

MR. TUCKER—In your paper of the 27th October, is an inquiry for Bakewell sheep. I have some to dispose of, that were imported last year, and I believe equal to any in the United States. My price for Ewes is $50 each, and for Bucks $100. I have 7 bucks and 20 ewes, and will allow any gentleman to select from them at the price named. One of my bucks measures behind the fore legs 49½ inches. He won two premiums in England, and is a most splendid sheep; indeed they are all good. I imported 46 last year, and they were selected from 17 different flocks. I believe you are acquainted with Mr. R**** of Otsego. I am told he says mine are the best sheep in America. I shall be pleased to hear from you soon, should your subscriber be still in want of Bakewells.

Yours respectfully, JOHN COWLES.

Truxton, Cortland co., 4th Nov., 1838.

From the New England Farmer.

Agricultural Societies and Cattle Shows.

The cattle shows and exhibitions of manufactures in our State having closed for the season, we propose now to say a few words, of their utility, and the modes of managing them; and to suggest such measures as in our opinion would increase the advantages of our agricultural societies, and render their influence more effectual to agricultural enterprise and improvement.

We have not at hand the means of ascertaining with precision the dates in the case; but, as well as we can recollect, the first cattle show in the United States was held about twenty-four years since, under the spirited exertions of some intelligent gentlemen at Pittsfield, Mass., at the head of whom was Elkanah Watson, Esq., then of that town. The Berkshire Agricultural Society took the lead in the cause, and a ploughing match was connected with their cattle show. This intelligent and highly enterprising society have continued their cattle show and exhibitions from that time to the present, with unabated zeal; and with beneficial effects of a decided and permanent character upon the agriculture of that district. Perhaps no better evidence of this can be given than in the fact, that the interest taken in this institution by the farmers of Berkshire universally was never stronger than at this time; and the exhibitions of the society, as we have been informed, were never more numerously attended nor better sustained than the current year.

The Massachusetts Agricultural Society, instituted as early as the year 1791, soon followed the lead of the Berkshire Society; and for more than twenty years, with the exception of three or four intermissions, held cattle shows and exhibitions of domestic manufactures at Brighton, open to the competition of farmers from every part of the commonwealth. Here too ploughing and drawing matches were held, which, by the liberality of their premiums, brought competitors oftentimes from a distance of fifty miles. These shows were held and managed under

the direction and personal superintendence of gentlemen of the highest standing in professional and political life; and went off with spirit and effect.

These movements were soon followed by the formation of county societies in the several counties of Essex, Worcester, Middlesex, Hampshire, Hamden, and Franklin, and Bristol and Plymouth. These societies were encouraged by liberal grants from the Legislature, giving to every agricultural society, formed in a county containing not less than 25,000 inhabitants, for every thousand dollars, which they should raise and permanently invest for the benefit of that society, the interest of which should be yearly appropriated to purposes of agricultural improvement, the annual sum of two hundred dollars, to be applied in premiums under the direction of the Trustees of the society; provided however, that in no case should any society receive annually more than six hundred dollars. Under these provisions a sum of upwards of four thousand dollars has been yearly given by the State to these different societies to be disbursed in agricultural premiums. This being added to the amount furnished by their own funds had formed a considerable aggregate; the sums actually offered by the Mass. Agricultural Society in premiums the current year exceeding in amount twelve hundred dollars. These county societies are now all of them in the practice of holding cattle shows and exhibitions in their respective counties. We have had the pleasure of attending as many of these as was practicable. As far as our observation extends, the bounty of the state could not have been applied to a more worthy object, nor with more success as concerns the public wealth, and the general improvement. The agricultural improvements in the state within the last twenty-five years have been immense. The plough itself has become a new instrument, in form, in lightness of draft, in ease in handling, in case of repairs, in the execution of its work, and in the neatness of its construction. The potato hoe, the drill seed sower, the seed harrow, the cultivator, the roller, the cradle, the horse rake, the corn planter, the threshing machine, the double-mould board plough, the side hill plough, owe their origin and general diffusion to agricultural societies and agricultural publications. The introduction of new seed, of most valuable fruits, of excellent esculent vegetables, of improved varieties of Indian corn, wheat, barley, and oats, this likewise is to be attributed in a great measure to the same source. The introduction likewise and diffusion of improved breeds of live stock, of the fine-wooled sheep, the long wooled sheep, the mutton breeds, the several improved varieties of swine, the beef and dairy stock, the Devon, the Holderness, the Alderney, the Ayrshire, the Improved Durham Short Horns, and of horses of an improved kind for the saddle and for draft, are all more or less to be ascribed to the spirit of public enterprise and improvement awakened and kept alive by these agreiultural societies, exhibitions and publications. It is indeed impossible to estimate by any exact measuse what has been effected in the short space of a quarter of a century; but it meets the observing and experienced eye everywhere in the improved and well furnished houses, ornamental fences and embellishments, smooth and well cultivated fields, commodious barns, substantial wagons and carriages, which are to be found every where in profusion among our agricultural population. It is important to keep this spirit of enterprise and public improvement awake and active; to press the steam to the utmost limits of safety; "to speed the plough;" and to relax no efforts to advance the cause of agricultural improvement; to diffuse agricultural intelligence; to raise the character and the profession of the farmer; and thus to extend the power and means, and quicken the spirit and enterprise by which the treasures of the earth shall be developed, the fund of human subsistence become constantly enlarged; and the comforts and reasonable luxuries of life diffused among all without stint.

The agricultural societies hold the power of doing immense good; and as the gentlemen who have the direction of the funds of these societies have no private views to answer, but are laboring in the most disinterested manner, solely for the public good, we know them too well to fear giving offence by any suggestions, which have no other object than the public good; and which will not be submitted without a perfect respect for their public spirit and superior judgment.

We have the highest opinion of the utility of cattle shows, ploughing matches and the exhibition of agricultural products and household manufactures. They excite an emulation, which engenders no bitterness of feeling, and which prompts to the most spirited improvements. They gratify a laudable ambition to exhibit to others, what we have accomplished. They extend the knowledge of what has been done far beyond what it could be by any other means. They are the only opportunities which many farmers enjoy of seeing samples of the improved stock in the country; and of comparing it with what they have themselves. They bring farmers together to interchange friendly sympathies, and to communicate their mutual experiences. They bring men of different professions and conditions together, the professional, the literary, the commercial, the manufacturing and the agricultural on common ground, and where no jarrings of religious or political party ought to intermingle; where those who labor with the head are made to feel their dependence on those, who labor with the hand; and those who labor with the hands recognize their obligations to science, to commerce, and to the mechanic arts, and find their own profession exalted and their self-respect increased by this unrestrained and mutual intercourse. These cattle shows have been the means of inducing the importation of all the valuable animals, which have been brought into our State through the liberality of gentlemen of large capital and large minds, in order to improve the stock of domestic animals in our own State. Especially, they keep the great subject of agriculture before the public mind in the light of its intrinsic, permanent, and universal importance. The well known custom of the Emperor of China at the return of every spring, to show his respect for the cultivators of the earth, and thus honoring their great art by holding the plough himself in the presence of the dignataries of the realm and of assembled thousands of his subjects, is well known. Its favorable influence upon the agricultural classes may easily be inferred; and our cattle shows, bringing together as they do gentlemen of all professions, have the same beneficial effects.

It has been therefore to us matter of much regret that the Massachusetts Society has now for two or three years suspended its annual and accustomed show at Brighton. We know that it is attended with great labor to the gentlemen of the Board of Trustees, to get up and superintend a matter so foreign to their accustomed pursuits and habits; perhaps it is a labor we ought not to ask of them; but we believe that sixty or a hundred dollars would furnish them three or five practical men, who would gladly take all the drudgery of the management off of their hands and get it up and carry it through in a manner honorable to the board and entirely satisfactory to the public. We know the labor is considerable, and in such case ought to be compensated; and we do not know how some portion of their funds could be more properly applied. H. C.

From Silliman's Journal of Science and Arts.

ART. VI.—CONSIDERATIONS UPON THE NATURE OF THE VEGETABLES THAT HAVE COVERED THE SURFACE OF THE EARTH, AT DIFFERENT EPOCHS OF ITS FORMATION; *read before the Academy of Sciences of Paris, on the* 11*th September*, 1837, by Mons. Adolphe Brongniart.

[Translated from the French, and communicated for this Journal, by R. W. HASKINS, of Buffalo, New-York.]

(*Concluded from page* 347.)

The study of the geographical distribution of those plants appertaining to the same families which alone composed the vegetation of the coal period, may, indeed indicate to us the climacterick conditions and consequently the physical causes which favored the increase of stature as well as the great frequency of these vegetables; and we may conclude from these, with much probability, that the same causes determined their preponderance at their epoch.

We see, for example, that the Ferns, Equiseta, and Lycopodiæ attain a more lofty stature in proportion as their geographical position approaches the equator. Thus it is only in the hottest regions of the globe that we find those arborescent Ferns which combine with the towering and majestic mien of the Palms, the elegant foliage of the ordinary Ferns, and of which we have indicated the existence in the coal formations. In these same regions the Equiseta and Lycopodiæ attain to the stature double or triple that which the largest of these species present in temperate climates. A second condition appears to have a still more marked influence upon their preponderance, in reference to the vegetables of other families, namely, humidity and uniformity of climate; conditions which are united in the highest perfection, in the small islands situated far distant from continents.

In such islands, indeed, the extent of the surrounding oceans fixes a temperate with but slight variations, and coupled with perpetual humidity; circumstances which appear to favor, in a remarkable manner, the development and the variety of specific forms among the Ferns and the analogous plants; while, on the contrary, under the influence of the same conditions, the phenogamous plants are little varied, and are far less numerous. From these causes it results, that while on the extensive continents of the earth the vascular Cryptogamic plants, such as the Ferns, Lycopodiæ, Equiseta, &c. often form scarcely one fiftieth of the total number of vegetables, yet in the small islands of the equatorial regions, these same plants constitute almost half, and in some cases, even two-thirds of all the vegetables which inhabit them.

The archipelagos, situated between the tropics, such as the islands of the great Pacific ocean, or the Antilles, are, then, the points of the globe which at the present time present vegetation the mose analogous to that which existed upon the earth when the vegetable kingdom commenced, for the first time, to develop itself thereon.

Detailed examination of the vegetables which accompany the coal cannot fail, therefore, to induce the inference that at this remote epoch the surface of the earth, in the countries where are found those vast depots of fossil carbon with which we are most familiar, namely, in Europe and North America, offered the same climacterick conditions which now exist in the archipelagos of the equinoctial regions; and probably a geographical configuration little different.

When we consider the number and thickness of the layers which constitute most of the coral formations, and examine the changes that, from first to last, have taken place in the specific forms of those vegetables of which they have been constituted, we cannot fail to see that this stupendous primitive vegetation, during a long interval, must have covered with its dense forests all parts of the globe which were at that period elevated above the sea; for all these present themselves with the same characteristics in Europe and America; and equinoctial Asia, as well as New Holland, seem therefore to have participated in this general uniformity of the structure of vegetables.

Nevertheless, this primitive vegetable existence promptly disappeared, to give place to a new creation, composed of beings of an organization less extraordinary than the preceding, but almost equally different from such as flourish at the present day.

To what cause can we attribute the destruction of all the plants which characterize this remarkable vegetation?

Is it due to some violent revolution of the globe? Did it arise from a gradual change of the physical conditions necessary to their existence; a change in part arising from the presence of those vegetables themselves? These questions cannot be resolved in the present state of our knowledge upon the subject.

Certain it is, however, that the deposition of the last layers of the coal formation was followed by the destruction of all the species which constituted this primitive vegetation, and particularly of those gigantic trees of peculiar structure, as the Lycopodiaceæ, the Ferns and the Equiseta of gigantic growth; which was an essential characteristic of this primitive creation.*

After the destruction of this primitive vegetation, the vegetable kingdom appears for a long period not to have attained the same degree of development. Indeed, in the numerous layers of secondary earths which succeed the coal formations, we scarcely ever find those masses of vegetable imprints, a species of natural herbariums, which, in these ancient depots of carbon attest to us the simultaneous existence of a prodigious number of plants.—Scarcely in any part of these formations do we meet with thick layers of fossil combustibles; and never are such layers often repeated, or found of such great extent as in the coal deposits. Either the vegetable kingdom at this period occupied more circumscribed portions of the surface of the earth, or its scattered individuals covered but incompletely a soil of little fertility, and of which the revolutions of the globe had not permitted them to become tranquil possessors; or, finally, the condition of the surface of the earth was not favorable to the preservation of the vegetables which then inhabited it.

Yet that long period which separated the coal from the tertiary formations, a period that was the theatre of so many physical revolutions of the globe, and which witnessed the apearance, in the waters of the deep, of gigantic reptiles, types of the fantastical organizations in which we may suppose we often recognize those monsters born of the imaginations of the poets of antiquity; this period, I say, is remarkable in the history of the vegetable kingdom, by the preponderance of two families which are lost, so to speak, in the midst of the immense variety of vegetables with which the surface of the earth is covered, at the present day, but which then predominated over all the others, by their number and their magnitude. These are the *Coniferæ*, of which the Fir, Pine, Yew and Cypress furnish well known examples; and the *Cycadeæ*, vegetables wholly exotic, less numerous at the present day than at this ancient period, and which joined to the leaves and mien of the Palms, the essential structure of the Coniferæ. The existence of these two families, during this period, is of high importance as signalizing an intimate relation between them, by their organization; and they form the intermediate link between the vascular Cryptogamia, which composed, almost alone, the primitive vegetation of the coal period, and the phanerogamic Dicotyledons, strictly speaking, which constituted a majority of the vegetable kingdom, during the tertiary period.

Thus, to the vascular Cryptogamia, the first degree of ligneous vegetation, succeeded the Coniferæ and the Cycadeæ, which held a rank more elevated in the vegetable scale, and to these last succeeded the dicotyledonous plants which occupy the summit of that scale.

In the vegetable kingdom, as in the animal, there has been, then, a gradual improvement in the organization of the beings which have successively existed upon our earth from the first which appeared upon its surface even to those that inhabit it at the present day.

The tertiary period, during which were deposited those earths that now form the soil of the principal capitals of

* We find, it is true, in some parts of the secondary formations, a small number of arborescent Ferns and of the gigantic Equiseti, but yet of a stature much less considerable than those of the coal formations; nor do we discover, there, any trace of the arborescent Lycopodiaceæ analogous to the Lepidodendrons.—*Author's note.*

Europe, as London, Paris, and Vienna, witnessed transformations, in the organic world, greater than any of those which had taken place since the destruction of the primitive vegetation.

In the animal kingdom: the creation of mammifers,* a class which all naturalists concur in placing at the summit of the animal scale, and by which nature seems to have preluded the creation of man; in the vegetable kingdom, the creation of the Dicotyledons, a grand division which, by unanimous consent, botanists have always placed at the head of this kingdom, and which, by the variety of its forms and organization, by the magnitude of its leaves and the beauty of its flowers and its fruits, must of necessity, have imprinted upon vegetation an aspect very different from that which it had offered through all previous periods.

This class of Dicotyledons, of which we are scarcely able to cite any indications at the close of the secondary, presented itself, all at once, during the tertiary period, with preponderating influence. It then, as at the present day, held dominion over other classes of the vegetable kingdom, both in reference to the number and variety of the species, as well as the magnitude of the individuals.—Thus the assemblage of vegetables which inhabited our climates during the deposition of the tertiary formation, which enveloped their ruins in its sedimentary layers, were intimately allied to the mass of our present vegetation, and more particularly to the flora of the temperate regions of Europe and America. The soil of these countries was covered then, as at present, with Pines, Firs, Culms, Poplars, Birches, Elms, Walnuts, Maples, and other trees almost identical with those which still flourish in our climates.

And yet, not only do we not recognize any indications of those singular vegetables which characterized the primitive forests of the coal period, but we rarely encounter, there, even fragments of plants analogous to those which now vegetate between the tropics.

We do not, however, necessarily infer that the same vegetable forms have been perpetuated from this epoch, still very ancient, (since it preceded the existence of man,) to the present day. No: very sensible differences almost always distinguish these inhabitants of our globe, very recent, geologically, but exceedingly ancient, chronologically, from our cotemporaneous vegetables to which they seem most nearly allied; and the existence in these same earths, in the north of France, of Palms, very different from those which still vegetate upon the borders of the Mediterranean, and of a small number of other plants which appertain to families now limited to the more torrid regions, seem to indicate that at this epoch central Europe enjoyed a temperature more elevated than at present; which, besides, accords very well with what we may deduce from the presence, in the same formations, and the same countries, of Elephants, Rhinoceroses and Hippopotami, animals which are now rarely found to range beyond the tropics.

What an astonishing contrast between the aspect of nature during modern geological periods, and that which she offered when the primitive vegetation, covered the surface of the globe!

Indeed, at the periods in question of the geological history of the world, the earth had already assumed, in great part, at least, the form which it presents at the present day; continents very extended, and mountains greatly elevated, fixed and determined varied climates, and thus favored diversity of beings. In this way, in countries of little extent, the vegetable kingdom offered us plants equally as diversified, one from another, as those found growing at the present day.

To the Coniferæ, with their narrow durable leaves of sombre green, were joined Birches, Poplars, Walnuts, and Maples, with broad leaves of a more lively tint; and in the shade of these trees, on the borders of waters or upon their surface flourished herbaceous plants, analogous to those which at present embellish our fields by the diversity of their forms and colors, and the variety of which renders them suitable to satisfy the different tastes of an infinity of animals of all classes.

The forests of the ancient world, like those of our epoch served, indeed, as a refuge for a vast number of animals, more or less analogous to those which still inhabit our globe. Thus Elephants, Rhinoceroses, Wild Boars, Bears, Lions, and Stags of all forms and of all statures, have successively inhabited them; while birds, reptiles, and numerous insects, complete this map of nature, as she presented herself, upon such parts of the earth as were elevated above the level of the oceans; the whole forming a scene equally beautiful and equally varied as that which is still witnessed upon the emerged portions of our globe.

On the contrary, at the dawn of the creation of organized beings, the terrestrial surface, divided, without doubt, into an infinity of Islands, low, and with a climate almost uniform, was it is true, covered with immense vegetables; but these trees, differing little from each other in their aspect, and the tint of their foliage; deprived of flowers and of those fruits with brilliant colors which so highly adorn many of our large trees, must have imprinted, upon that vegetation, a monotony not interrupted even by those small herbaceous plants that, by the elegance of their flowers, constitute the ornament of our groves.

Add to this that neither mammifer, or bird, nor any animal, in short, was present to enliven these dense forests, and we may be able to form a very just idea of this primitive nature; sombre, cheerless and silent, but at the same time so imposing by its grandeur, and by the space which it has been called to fill in the history of the globe.

Such, gentlemen, is a rude outline of the great revolutions of terrestrial vegetation, as the researches made upon this subject, within the last thirty years, have enabled us to trace them. Each day will doubtless add new traits to these details; but recent discoveries, by confirming the results at which we had previously arrived, seem to assure us that this general delineation will not experience great changes when, thanks to the materials that are being collected on all sides for this object, we shall be enabled to transform this rough draught into a picture more finished and complete.

* In placing the first appearance of mammifers at the epoch of the tertiary formation, I do not include the fact, unequalled elsewhere, of the fossil mammifers of Stones field; a case which forms an exception to all former experience, and which cannot be detailed in so limited an essay.—*Author's note.*

For drawings and brief descriptions of these fossils, which occurred in *oolite*, see Lyell's Geology, American edition, vol. I. pp. 154-5.—*Translator.*

AN ADDRESS,

Delivered before the Middlesex Society of Husbandmen and Manufacturers, at the Annual Cattle Show in Concord, Mass., Oct. 3, 1838. By Wm. Buckminster, Esq., *of Framingham.*

(*Concluded from page* 350.)

Now instead of going through with this tedious process of planting, and sowing, and cropping, with grain, till we have reduced the soil lower, in reality, than when we began, we may renovate all our mowing lands with much less labor and less manure.

About the first of September plough in the grass crop that is growing, and cover it up completely. Then roll down the furrows close with a heavy roller. Put on a dozen loads of compost manure to the acre. Harrow thoroughly, lengthwise and diagonally but not crosswise. Then sow grass seed and cover it with a bush harrow.—The clover seed should not be sown till winter.

By this process you convert, on one acre, many tons of green grass and roots to manure, putting it into a rapid state of decomposition for your hay crop that is to follow. By repeating this process once in three or four years we can bring our soils to any degree of fertility we please, when we shall need no manure!

We can then turn to the surface a mass of decomposed vegetable matter that needs no enriching, while we turn down in this place a new supply, ready again to be turned to the surface when the soil again becomes choked with abundance of roots.

This renovating process is attended with but little expense. We plough at the most leisure season; when our teams are strong and cheaply fed. They find their supper in the field they work in, as soon as the yoke is loosed; when our teams are strong and cheaply fed. They find their supper in the field they work in, as soon as the yoke is loosed; and in the morning they are in the field long before their masters and ready to renew the task.

Low land—wet land that cannot be planted or touched in spring, may be thus managed, and its sour, coarse grain be put to rotting, and its place be supplied by a richer crop. Such land will not often require the plough. A top dressing will long continue its productive powers and keep at bay the poorer grasses.

What valuable interest do we sacrifice by this course of tillage? We miss no crop as in case of a summer fallow. But lose a part of the profits arising from hoed crops and grain crops. We forego the advantages of laboring the whole of April on spring grain—the whole of May and June in planting corn and potatoes and rooting out the weeds with handhoes, and at the season when teams are kept at the greatest expense—and the whole of autumn in harvesting a scanty crop on land half manured.

We may raise grain enough for our own supply at small expense.

One acre of corn and another of English grain, well managed, will usually suppy a family with bread. And though we cannot afford to raise grain to be carried to market, neither can we afford to resort to our seaports to buy it. It may cost us an eighth to purchase and bring it home. By raising our own grain we avoid both these charges—these two eighths or one-fourth of the value. I have known farmers to make still greater sacrifices. They have sold themselves short in autumn, when bread was plenty, to purchase again in spring when it is usually more scarce. Hence the maxim that farmers should live principally on their own productions.

Our pasture lands are much neglected. We mow the bushes in them from age to age, in order to kill them.—Now although this may be the best mode of treating the mulberry bush, to make it thrive, it cannot be the best mode to destroy the fern and the whortleberry. We should not mow bushes till they are large enough for fuel. To kill small bushes take the plough. If the land be too rough for this let the bushes grow, and let it return to its original wildness, from which state it should never have been called. Pasture lands that deserve the name may be renovated without dividing them—without manuring—without planting.

Let them be ploughed, harrowed, and seeded down anew as in the case recommended for mowing lands. Pastures are usually the most distant lands. We cannot so easily manure them. A little plaster or ashes, sown on seeding down, will give the new crop a start. But if nothing is applied as a top dressing the pasture will yield the better for ploughing, and the bushes will die. We are often deterred from meddling with old pastures on account of the trouble and expense of fencing off a portion to keep out the cattle while a hoe crop is growing. By the mode here recommended we need no fencing off. We can plough and seed down again any portion of a large pasture we may choose. If we manure such land it will not require one fourth so much to the acre as a hoed crop requires.

Our low lands are much neglected. They are generally our richest lands and want draining and seeding merely to produce good crops of grass. I have one acre of such land that has borne me ten successive crops of grass and grain and potatoes, and it has never been manured. It bore two tons of good English hay last summer at the first cutting, and the purchaser agreed to take it without weighing at within a fraction of two tons. A second crop was cut in August and gave us one good load. The cattle are now taking their turn on it and are getting a good share.—Twelve years ago this acre produced nothing. It had produced nothing for fifty years. It was two wet. I caused it to be drained, then carted on about twenty loads of loam from the road side, to render the surface more compact that the grass seed might vegetate, and I have had two crops of corn and one of potatoes from it within the ten years—have fed it every autumn when in grass, and have often cut two crops from it in a year. Nothing in the shape of manure has been put on the main body of this acre for these ten years except about half a dozen loads of leached ashes. When the wild grass begins to show itself we plough it under in September and seed down again.

Our high pasture lands may be renovated in this way without planting—without manuring—without fencing off. They are usually the most distant from the barn and do not get a share of the manure. We think we have none to spare for these lands. We can do better with it near home.

If we plant any portion of a pasture we must fence it from the rest. If we take a crop of grain or potatoes from it we must manure or it is impoverished by the operation.

Thousands of acres of such lands may be made to produce double the feed they now do merely by a proper use of the plough and a little grass seed. And the plough is quite as good an instrument to kill the bushes with as a bush-scythe. The silk growers cut the mulberry bush annually, and think it grows the better for it. We mow our bushes in pastures from age to age. Can the same kind of trimming make the mulberry thrive, and be destructive to the fern and the whortleberry?

If the pasture be quite too rocky for the plough—if we cannot pull up half the bushes and bury the rest with it, let the land return again to its native wilderness, whence it should never have been called. It is not profitable to cut bushes before they are tall enough for wood.

Bear with me a little longer while I say a few words on the subject of farming tools.

Our ploughs have been much improved within thirty years. We now turn our green sward with half the team we formerly employed. Thirty years ago who attempted to plough green sward with one yoke of oxen? Three yoke were usually employed in this service.

The moulder now fits close to the share. The furrow rises without any check from the unevenness of the inclined plane. The plough cuts as a regular, tapering, smooth wedge. But we have not yet brought it to perfection. We have much improved upon the posts, with which the north African stirs his soil—holding the top of it in his hands and gauging its point according to the strength of his team. In some districts in England they still use something not much superior to the African model. Our grass ploughs are too short for even or plane ground—the furrow breaks before it is put in its place.—The advocates for short ploughs allege that they are attended with less friction. This is a mistake. A long tapering wedge raises a weight with less friction than a short one. A long plough keeps the furrow suspended and unbroken, and the falling sod assists to help the rising portion, as the sinking bucket in a well helps to draw up the rising one.

Our hay forks and our manure forks are now made of better metal than formerly, and if we perform no more labor with them, we do it with more ease.

We begin to use the horse-rake in haying; but we are far behind Pennsylvania and New Jersey, New Hampshire and Rhode Island in the use of them. There are

three or four kinds in the United States. Yet not a—farmer (?) shall I say in a thousand, in Massachusetts, has ever seen one. As a load of them was passing, last summer, to Boston, many inquired what those sharp wooden-tined things were made for, and whether they were not to dig potatoes with?

In tolerably smooth ground I have very often seen an acre raked perfectly clean by one of these in half an hour. Your hired-man will be half a day, with a hand rake, in performing the same.

A seed planter, or planting harrow, has been invented this season and may be seen at the store of D. Prouty & Co., Boston. It will plant an acre of corn in an hour, furrowing out, dropping, covering and rolling down at one operation. Several fields were planted handsomely with it last spring. It planted an acre of ruta baga, (4,000 hills,) in fifty-five minutes. The turneps look finely.

A machine for sowing grass-seed and grain is much wanted. I have seen at Washington and at New-York a machine for sowing plaster and grain—the gearing seems to be more complicated than is necessary, but it is said to perform well.

A very simple machine has been planned this summer to sow grain, or grass-seed. It is a box four or five feet long placed forward of a common harrow. A sieve forms the back side of the box. By shifting the sieve, grain of any kind may be sown as well as grass-seed, and the team performs the whole without extra labor. It is quite impossible to sow grass-seed well by hand. We sow some too thick and some too sparse. For this service I feel sure "*My hands were never made.*" By regular, methodical sowing we save much expense in seed. We used only half the quantity of ruta baga seed that is usually sown.

We are often accused of being backward in adopting improvements. The spinner is said to tend, now, one hundred spindles instead of one.

The traveller progresses four miles while he formerly advanced one. And shall farmers alone remain stationary? Shall we not also make inquiry whether our pace may not be quickened? Shall we be skittish and fear to examine new machinery to facilitate the operations of husbandry, because we have discovered that the very newest patent churns and washing machines will not go alone? Let us not fear to examine new modes of operation. Let us ever attempt improvement.

CULTURE OF BULBOUS FLOWER ROOTS,

HYACINTHS, TULIPS, NARCISSUS, ETC.

The proper soil for bulbs, in general, is a light rich soil, mixed with a considerable portion of fine sea sand; and the compost generally used, is one third fine sand, one sixth rich loam, one third cow dung, and one-sixth leaves of trees. The two last to be well rotted, and at least two years old; with this mixture, the beds are formed two feet deep, at least, and raised four or six inches above the level of the garden, to turn off rain. The proper time of planting in beds, is in the months of October and November, though it may answer by the first of December—provided the ground remains sufficiently open.

HYACINTHS

May by set six inches apart from each other and each bulb placed in fine sea sand and covered with it four inches deep. After the bed is thus planted, cover the whole carefully with earth four inches. When the winter is fairly set in, (say from the 1st to the 10th of December,) then cover with leaves, straw, or sea-weed, four or six inches deep, which should be removed early in the spring; a part of it, perhaps as early as the 20th of February, and the remainder during March. *With too much protection, the bulbs grow up weak and pale, and are materially injured.* During their bloom, it will be proper to support the bells by small sticks, and protect them from heavy rains and the sun. The flower stems should be cut off as soon as they have faded, and the beds left exposed until the leaves are nearly dried, when the bulbs should be taken up, the leaves cut off half an inch from the top of the bulbs, and then replaced (sideways) with the fibres on, and covered with earth, there to dry gradually for a month; when they are to be taken up, cleaned from the earth and fibres, and each bulb wrapped in a separate paper in a dry place, and frequently aired, or to be packed in dry sand.

When wanted for the parlor, they should be planted in September, (if to blow early in the winter) in deep narrow pots, six inches in diameter at the top, and about one third deeper than common flower pots. The soil the same as before mentioned, and the bulb to be just covered by it. They should not be watered from the top, but the pots should stand, twice a week, in saucers filled with water. Let them have as much air and sun as possible, and not suffer them to feel the direct influence of the fire—for heat forces the stem out before the bells have time to form and acquire vigor and beauty. When the flowers begin to open, give as much water as the earth will imbibe.

To preserve these bulbs, they should, as soon as the bloom is over, be turned out of the pot with fibres and earth, and put in a prepared bed in the garden, to be treated afterwards as those growing in open ground. By this mode the bulbs will not be materially injured, and will blow well the second year. Whereas those grown on glasses or forced, are seldom good for anything afterwards.

SINGLE HYACINTHS are preferable to most double ones for early flowering in winter; being two or three weeks sooner in bloom. Their colors are more brilliant, and the bells more numerous than the double.

TULIPS are hardier than the hyacinth, and in open ground may be planted four inches apart, covered two or three inches with earth.

THE POLYANTHUS NARCISSUS should be planted six inches deep, and eight inches apart, and carefully protected from frost, being the most tender of the bulbs. Unless taken up after bloom, it will grow in the autumn and suffer during winter.

Depth and distances.—Hyacinths, amaryllis, martagon, and other lillies, and pæonies, should be planted at the depth of four inches; crown imperials, and polyanthus narcissus, five inches; tulips, double narcissus, jonquills, colchicums and snowflakes, three inches; bulbous irises crocuses, arums, small fritelarias, tiger flowers, gladiolus, and snowdrops, two inches; ranunculus, anemones, oxalis and dog's-tooth violets, one inch; always measuring from the top of the bulbs. The rows should be about ten inches apart, and the roots be placed from four to six inches apart, in the rows, according to their size.

Method to bloom Hyacinths and other bulbs in the winter season, in pots or glasses.—For this purpose, single hyacinths, and such as are designated earliest among the double, are to be preferred. Single hyacinths are generally held in less estimation than double ones; their colors however, are more vivid and their bells, though smaller are more numerous. Some of the finer sorts are exquisitely beautiful; they are preferable for flowering in winter to most of the double ones, as they bloom two or three weeks earlier, and are very sweet scented. Roman narcissus, double jonquills, polyanthus narcissus, double narcissus, and crocuses, also make a fine appearance in the parlor during the winter. It is a remarkable circumstance of the crocus, that it keeps its petals expanded during a tolerable bright candle or lamp light, in the same way as it does during the light of the sun. If the candle be removed, the crocuses close their petals, as they do in the garden when a cloud obscures the sun; and when the artificial light is restored, they open again, as they do with the return of the direct solar rays.

Hyacinths intended for glasses should be placed in them about the middle of November, the glasses being previously filled with pure water, so that the bottom of the bulb may just touch the water; then place them for the first ten days in a dark room, to promote the shooting of the roots, after which expose them to the light and sun as much as possible. They will blow, however, without any sun; but the colors of the flowers will be inferior. The water should be changed as it becomes impure; draw the roots entirely out of the glasses, rinse off the fibres in clean water, and the glasses well washed inside; care should be taken not to suffer the water to freeze, as it not only bursts the glasses, but often causes the fibres to decay. Whether the water be hard or soft is of no great consequence; but soft or rain water is considered preferable, but it must be perfectly clear. Forced bulbs are seldom good for anything afterwards.—*Farmer and Gard.*

THE SKANEATELES FAIR.

Was held, pursuant to notice, given in our last number. Although the weather, early in the morning, was unpropitious, yet many of our Agricultural citizens in the neighborhood, were not discouraged from commencing in the rain their way with their stock to the exhibition. As the day advanced, the weather became more propitious.—On the whole, the various descriptions of live cattle showed to advantage, and the numerous attendence of lookers on clearly manifested that the interest taken in the Fair had increased since last year. We hail the establishment of these Fairs as an interesting epoch, believing their beneficial effects will be felt far and wide.

We may not be enabled to notice all the good things exhibited, but will enumerate some of them, remarking, should any of our friends not see any mention of their particular stock, we trust they will attribute it to an oversight, or the difficulty in some cases of ascertaining to whom the property belonged. Our attention was first engaged by a table about the centre of the lot, on which lay samples of early red blaze and yellow corn, which, with a large basket of summer, fall and winter apples, were furnished by Silas Gaylord: also, early 12 row yellow and flesh colored corn was shown by David Hall, and blaze and fine yellow corn by James C. Fuller. On the table were three specimens of squashes. One weighing 80 lbs. raised by Alfred Lamb; the two others were raised by George Pryor, who, from two seeds sown, reaped the astonishing product of 426 lbs., the largest weighing 80.—He also exhibited specimens of sugar beets; and Richard Tallcot, jr. a basket of French sugar beet seed for sale.

The only implements exhibited, were the property of Francis Baber, consisting of a potato or root washer, and an excellent four knife English chaff cutter. Among the live stock, were the following: A ram of the Saxony and Merino breed, with a very fine fleece, and a half breed South Down ram, the property of Samuel P. Rhoades, who also exhibited a handsome two year old colt, and one of four months old, which was sold for $50. Edward Bisdee, of West Hill, exhibited 50 yearlings and lambs, of the Bakewell down breed, which were much admired, although the travel through the rain and mud affected their appearance in value to the amount of many shillings a head. He also showed a very heavy full blooded Bakewell ram, which he imported; and ewe and ram lambs, his progeny. Francis Baber showed a ram of the Bakewell, crossed with the Merino breed; John Bisdee, a ram lamb of the Bakewell and South Down cross, 6 months old, and weighs 134 lbs.

John Snook and Robert Bradford exhibited, the former, four ewes and two rams, and the latter a ram and a ewe of pure blood South Down imported sheep, which attracted general attention.

Of cattle, Silas Gaylord exhibited a half bred cow, by Brutus, and also a Devonshire and Swede cow—three fine animals, and also a pair of heavy working oxen. William Fuller a neat Devonshire heifer. Alfred Lamb, a capital yearling short horn Durham heifer, as did also Lewis H. Sandford, George Pryor, Phares Gould, Warren Hecox, and David Hall. James C. Fuller, a Devonshire cow and her offspring, and three year old heifer. Warren Hecox, four, and Chester Parsons, one short horn calves. James Toogood, a yoke of oxen, and Russel Frost, two heifers. Last, and best of all, were the cattle from the Van Rensselaer herd of imported short horn Durhams, now the joint property of those enterprising agriculturists, Silas Gaylord and William Fuller, consisting of the noble bull President, a capital fine young cow, both for symmetry and milk, a famous heifer, and an extraordinary beautiful bull calf. It may be thought by our distant readers, or those who were not on the ground, that these expressions are bordering too much on the hyperbolical; but it will be thought otherwise, when we inform them that the owners have been offered one hundred dollars for the calf. We understand the proprietors of this choice stock will feel a pleasure to exhibit these animals to any one who may be disposed to view them. This remark applies also to the owners of the South Down and other imported sheep.

Among the horses we particularly noticed the fine stallion Gasper, and a two year old horse colt, his progeny, the property of Joshua Bates. A handsome span of chestnut colts, of Reuben Case's, and a five year old gelding of Simeon Cuddeback's. There were but few pigs exhibited, and those choice ones, particularly a boar and sow, of Alfred Wilkinson's, and a boar of Elijah Parson's. —*Skaneateles Columbian.*

From the New Haven Courant.

Agricultural.

The Rohan Potato.—On the 15th of April last through the kindness of a friend, Alexander Thompson, Esq. of Catskill, the subscriber received a few small tubers of this variety of the potato, the average weight of which was a fraction less than five ounces each. I carefully divided twenty of them by cutting them in pieces so as to leave two setts or eyes in each piece, amounting in the whole to 269 pieces and weighing not less than half an once each.

Those I planted on the 28th of April in hills, four feet assunder, each way, placing one piece only in each hill.

On the 9th inst. the crop was gathered. The product as measured in a half bushel, I found to be twenty bushels and a half, being a fraction over a bushel to each tuber planted. The average weight of a few of the most productive hills was eight pounds ten ounces—the largest single tuber which I weighed, 2 lbs. 13 oz. During the past season the extremely hot weather and severity of the drouth in this section of the county, have, in the opinion of the farmers in my neighborhood, lessened the potato crop from one-third to one-half, on the product in ordinary seasons. It is reasonable to suppose that the same causes have had a like operation upon the Rohan potato.

From the small practical acquaintance I have yet had with the cultivation of this variety, I feel a diffidence in expressing an opinion on the best mode of its cultivation. I will therefore only state briefly the method in which I proceeded in this small experiment. Long or barn-yard manure was spread upon the surface of the ground and turned in with the plough—furrows 10 or 12 inches deep—seed planted deep, covered with four inches of earth—in hoeing, very little accumulation of earth upon the hill.

On opening the hills I found the tubers thickly clustered together—occupying little if any more space than if placed in a half bushel measure. The circumstance has induced me to believe that a space of three feet between the hills would be amply sufficient and would secure as great a growth in each, as if planted four feet apart. I should also think it advisable to point in each hill two places with the two setts on each piece, placing them six inches apart from each other. SAMUEL WOODRUFF.

Windsor, October 23, 1838.

Ice and Ice Houses.

In answer to your request for information as to the best plan of building ice-houses, I will merely inform you that I have an ice house that has been used by my family for about fifty years, and has never failed to preserve an abundance of ice for our supplies. It is about 16 by 12 feet and judging from recollection, for it is now nearly half full, is about 16 feet deep. It was probably dug down to the sand or gravel, is walled like and ordinary cellar, the wall extending about 3 feet above the level of the adjacent ground, and earth thrown against it nearly to the roof. This serves to preserve a uniform temperature, and prevents leakage from rain, &c. The bottom of the cellar is supplied with pieces of timber, say 8 by 8 inches thick, which are placed about 6 inches apart, and this protects the ice from the influence of the earth below. When the ice is being put in I take care to have the bottom and sides well provided with clean rye straw, and have the ice occasionally broken fine, and when the house is full I have it well covered up with the same material. This is all that is necessary to be particular about as the straw is a non-conductor of caloric, and the ice being well embedded therein, does not melt in the warmest weather. Many years ago this house was lined with boards, which was only useful as a harbor for rats. The lining gradually decayed and has long since been removed and still the ice is kept as well as ever. Give your ice a dry cellar and plenty of rye straw, and rest assured you will require neither tan nor pulverised charcoal, nor boards to keep it cool. A PHILA. CO. FARMER.

Farmer and Gardener.

Diseases of Horses.

Fever is of two kinds—First, When it is an excited state of the system without any peculiar local affection, it is called *Idiopathic*. Second—When dependent (*i. e.* symptomatic) or inflammation of any part.

First—IDIOPATHIC FEVER.—Without paying any regard to the question whether or not this disease can really exist of itself, without being dependent on some other lesion, I shall consider fever generally, under this head.

Symptoms.—It generally begins with a cold shivering fit, the horse is dull and listless, his legs and feet are cold, though sometimes not all of them, but one, two or three as it may happen, breathing difficult, quick pulse, costiveness, no appetite, and the urine high-colored. After the shivering (which first ushers it in) has lasted some little time, it is succeeded by the warm stage, which is an excited state, the skin is hot and dry, the eyes are suffused, pulse full and quick. This stage usually lasts for a few hours, when it may end in a slight sweating stage, or a cessasion of the symptoms, until the time that the cold stage came on previously, when the same thing again occurs as just described. This state of fever may continue for several days, when it terminates either in inflammation of the brain or lungs, or gradually subsides. It is not of itself dangerous, but proves so by producing the above sequel.

Causes.—Changes of temperature from cold to hot, or *vice versa;* any means by which the horse is much chilled or perspiration suddenly checked; fatigue, over-heated stables, and peculiar states of the atmosphere are the most frequent.

Treatment.—As fever depends on, or rather is an excited state of the system, our remidial means must be of an opposite character, *i. e.* depressing; the most powerful is bleeding, and the quantity taken, and the propriety of taking any, must be dependent on the degree of the disease. The medical means consist of purgatives and cooling salts, a drachm or a drachm and a half of alocs should be given night and morning until he is freely purged; with this fever medicine, digitalis (foxglove), one drachm, tartar emetic a drachm and a half, and nitre three drachm mixed, to be given night and morning. Digitalis has the property of producing an intermittent pulse, *i. e.* after every six or seven beats, it (the pulse) ceases, while one two or even more can be counted; where this is the case the medicine should be reduced to one-half, and in a few days totally discontinued; but the nitre and tartar emetic is still to be persevered in. If it does not produce this effect it shows the disease has proceeded too far to be arrested by it, or in all probability any thing else. If symptoms of inflammation of the lungs should appear, hellebore should be *cautiously* and *carefully* administered in half drachm doses, three times a day; if it produces unpleasant effects discontinue it. The horse should be placed in a cool and well ventilated stable, and be kept warmly clothed.

Second—SYMTOMATIC FEVER is merely the system sympathising with some local affections; of course, by subduing this affection the feverish disturbance will cease.—*London Farmers' Magazine*

LARGE EAR OF CORN.—Mr. Charles James, has sent us an ear of yellow or northern Corn, measuring 14 inches in length, and 7 inches in circumference. It has 16 rows of grain, which is well formed and sound. He states that many other ears may be found in his field, of equal size. —*Wisconsin Culturist.*

Rohan Potatoes.

THE real article, just received at the Rochester Seed Store. REYNOLDS & BATEHAM

Rochester, Nov. 3d, 1838.

Genuine Morus Multicaulis.

THE subscriber has still for sale, one thousand genuine Morus multicaulis, of thrifty growth and untrimmed. They are choice trees, selected for their size, and will afford a large quantity of cuttings. ASA ROWE.

Greece, October 27th, 1838.

Seeds for 1839.

WE are daily receiving our fall supply of SEEDS for the coming season and advices have just been received from London, of the shipment of a large invoice of *English seeds of the present years growth.* They will shortly be received, and we shall then be prepared to supply dealers and others by wholesale or retail, with such articles, and at such prices as cannot fail of giving the fullest satisfaction.

Orders from abroad where the articles are to be forwarded by navigation, should be sent as soon as possible. Those of our friends who have already favored us with their orders may rest assured that their wishes will receive due attention. REYNOLDS & BATEHAM.

Rochester Seed Store, October 27th, 1838.

Ram Lambs for Sale---Half Blooded. Goord's Improved Kents.

MR. Richard Goord, of Irvade, in Kent, England, having (as Bakewell and Ellman with the Leicesters and Southdowns,) spent a long life in endeavoring to form an improved breed from the Kents, has so far succeeded as to carry off all the prizes at the annual shows, where they have been placed in competition, and has been crowned with all the honors such success meets with in that country. These Sheep at twenty months old, weigh from 32 to 36 lbs. the quarter. There is no larger breed of sheep in England than the Kent. I brought out last year a choice Ram of the Improved Breed, probably the first and only one ever brought to this Continent, and have now some of his Ram Lambs for sale, at from seven to ten dollars each. S. W. SHOTTER.

Pittsford, Monroe Co. N. Y, Oct. 10, 1838.–w3t*

SAXONY SHEEP FOR SALE.

40 RAMS & 60 Ewes of the pure Electoral Saxon Race. The subscriber imported 100 yearling Ewes and a number of Rams in 1827 which were selected by himself from the purest race in Saxony, and with which he commenced his flock, and not only mantained them in all their purity of blood, but improved them in size, symmetry of form, and quantity and quality of wool. The above number of Ewes will either be sold or let for a term of years, and can be increased to 75 or 80 if desired.

H. D. GROVE,

Buskirks Bridge Post Office, Washington Co. N.Y.

August 25, 1838–3m*

A Farm for Sale.

THE subscriber, offers for sale a farm, containing one hundred and sixty-six acres of choice land. One hundred and twenty-five under improvement, and the most of it first rate grain land, situated at Hanover centre, in the county of Chautauque, two miles from Silver Creek Harbor, three from La Grange, four from Irving Harbor, and four from Farrestville.

There are upon the premises, two dwelling houses, one of them a large two story building, with commodious out buildings, orcharding, &c.

This farm is pleasantly situated, the soil of a superior quality, and is considered by competent judges, one of the most desirable farms in the county.

For terms, apply to David Seymour, on the premises, or to the subscriber at Lodi, Erie county.

JOSEPH PLUMB.

September 15th, 1838.–w8m2

Silk Business.

PERSONS who intend doing an extensive business next year with the Mulberries, can be supplied with the *true genuine Morus multicaulis* trees and cuttings, by sending in their orders early. Companies that wish to contract for large quantities, can be supplied on reasonable terms. The trees are to be well packed, so as to be sent to any part of the United States, and delivered this fall. The subscriber has been extensively engaged in the culture of silk for some years, particularly to the production of the Morus multicaulis; and will be hapyy to give any information respecting the tree or feeding the worm that may be required—silk, worm eggs, &c.

All letters will meet with immediate attention if assigned to EDWARD H. ARNOLD.

Burlington, New Jersey.

N. B. As orders are coming in now, it would be well for those in want to apply early. Aug. 1838.–3m*

MULBERRY TREES.

200,000 GENUINE Mulberry Trees, and as many more as may be wanted, of the most approved kinds—consisting of the best selected varieties now in use for cultivation, feeding worms, and making silk; being acclimated to this country, and adapted to either warm or cold climates, affording a rare opportunity for Companies or individuals to be supplied, from the most extensive collection of Mulberry trees ever seen in any village within the United States.

Autumn is decidedly the best time for removal, and orders left with

Messrs. I. B. Colt, Sec'y of the Connecticut Silk Manufacturing Company, Hartford; Alonzo Wakeman, at the office of the American Institute, No. 187 Broadway, N. Y.; Thomas Lloyd, Jr. No. 236 Filbert street, Philadelphia, Pa.; Luther I. Cox, Baltimore, Md.; B. Snider & Co. Savannah, Ga; Bliss, Jenkins & Co. Mobile, Al.; James Lyman, St. Louis, Mo.; Case & Judd, Columbus, O.; G. Harwood, Rochester, N. Y.; and the publishers of this advertisement, or with the subscriber, in Northamp, ton, Mass.

Orders left with the above gentlemen will be promptly attended to, and each will be furnished with samples of the foliage.

Several valuable farms may be had with or without Mulberry Plantations. Apply at the office of

D. STEBBINS.

Notrhampton, Sept. 1, 1838.–10t*

GOLD versus SILK!!

10,000 CUTTINGS of the genuine Morus Multicaulis trees for sale at a bargain.

These Cuttings are the same as were planted last spring, and produced the trees which are now selling at from 50 *cts.* to $1 each, by means of which many handsome fortunes have been realized. They are of sure growth, and owing to their great value for producing silk, they will doubtless be in good demand for several years. Price for the 10,000 $400,—$5 per 100.

N. B. A few fine trees still for sale. ☞ Speak quick or you miss'em. REYNOLDS & BATEHAM.

Rochester, Nov. 3d, 1838.

Chinese Morus Multicaulis, &c.

AT the Linnæan Gardens, Flushing, New-York—65,000 splendid Trees of the genuine Chinese Morus Multicaulis for sale at moderate prices; and also cuttings of the same. None of the *humbug* kind are cultivated at this establishment.

Also, a large supply of the Canton, Alpine or Moretti, Dandolo, Expansa, Broussa, Asiatic, and cuttings in any quantity. Priced catalogues will be sent to every applicant, but a *personal application* will be found far the most satisfactory, and purshasers can then see these superior Trees. Also, Fruit and Ornamental Trees, Plants, and Seeds of every kind, and an immense stock of Bulbous Flower roots, just arrived from Holland.

Applications can be made by mail, and priced catalogues will be sent to all who desire them.

WILLIAM PRINCE & SON.

October 20th, 1838.–6w

Fruit Trees for Sale.

THE subscriber respectfully informs his friends and the public, that he has for sale at his Nursery in Rochester, Monroe county, state of New-York, a large quantity of Fruit Trees, grafted and inoculated with the most approved kinds, now fit for transplanting, which he will sell on the most reasonable terms. SAMUEL MOULSON.

April 15, 1838.

N. B. CASH will be paid for a few thousand two years old APPLE TREES.

Monroe Horticultural Garden & Nur-

SERIES, GREECE, MONROE COUNTY, N. Y.

THIS establishment now comprises over 20 acres, covered compactly with Trees and Plants in the different stages of their growth.

The subscriber offers to the public a choice selection of Fruit Trees, of French, German, English and American varieties, consisting of Apples, Pears, Plums, Peaches, Cherries, Apricots, Nectarines, Quinces, Currants, Gooseberries, Raspberries, Grape Vines, Strawberries, Ornamental Trees, Shrubs, Plants, Hardy Roses, Vines, Creepers, Herbaceous Perennial Plants, Bulbous Roots, Splendid Pæonies, Double Dahlias, &c. &c.

Also, a large collection of Green House Plants, of choice and select varieties, in good condition.

Orders respectfully solicited. Trees and Plants, when ordered, are carefully selected and faithfully packed, and if desired, delivered on the Canal, one mile from the Nursery, or at Rochester.

Orders for Mr. Rowe's Nursery received by the publisher of this paper.

Catalogues will be sent to every applicant, gratis, or may be had by calling at the office of the Genesee Farmer.

April 1, 1838. ASA ROWE.